

Notebook.

Agricultural Notes.

China.

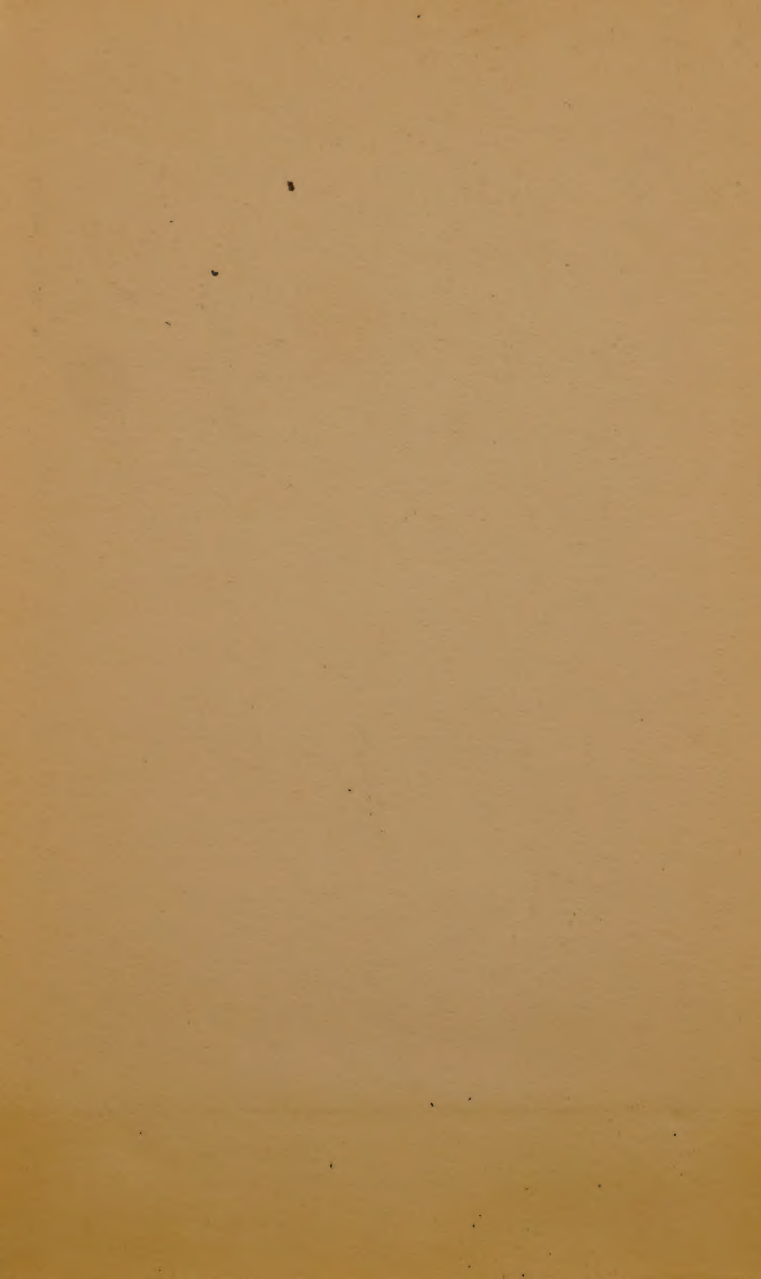
Oct. 21 to Oct. 31, 1930.

W. J. Morse.

U. S. Dept. of Agric.

Washington, D. C.

Written up.



Tuesday - October 21, 1930
Peking - China

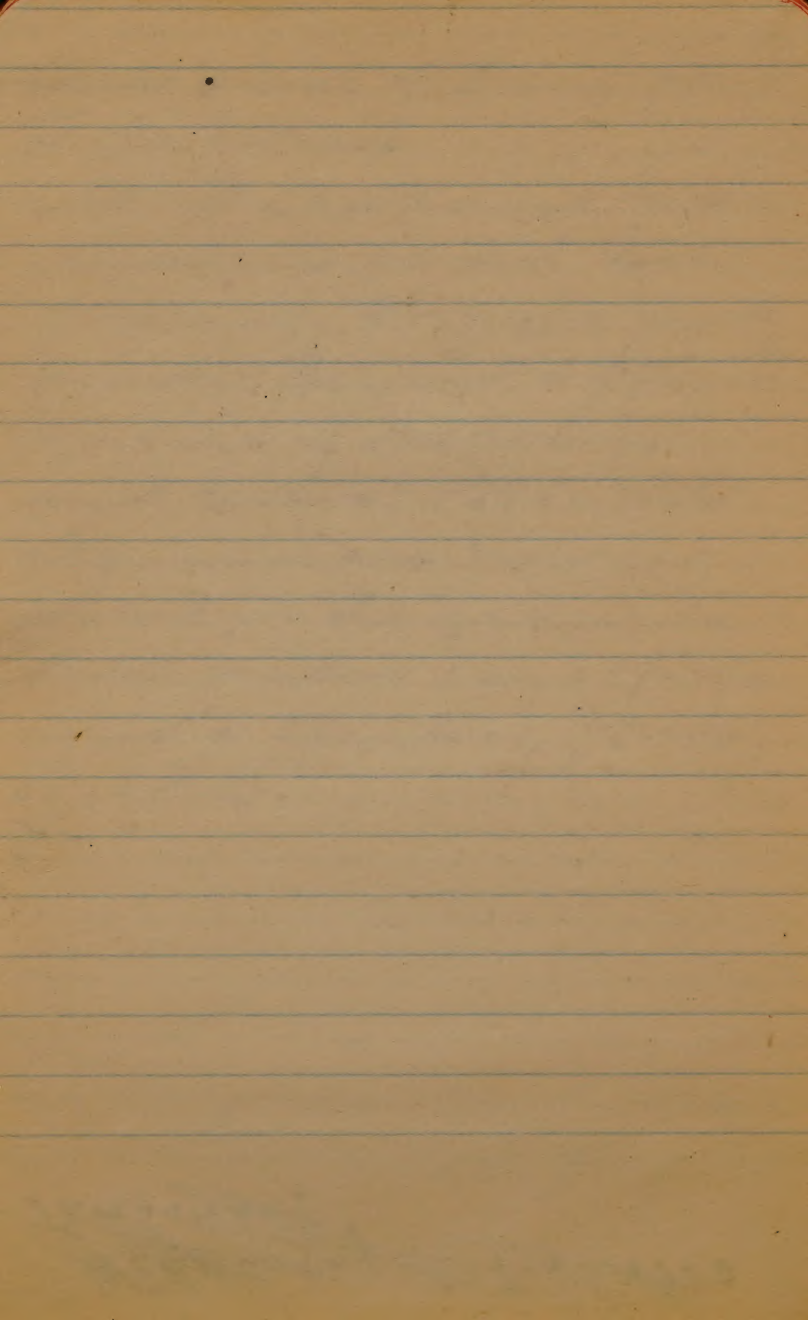
Cool and clear. In the morning went to Donnell's room and talked over the legumes collected about Peking and went over the photographs.

After lunch we went out to the grounds of the Temple of Heaven and visited the various temples and buildings in these grounds. The buildings are badly neglected and no care is taken of them. When different generals come in they billit their men in the various buildings and even

used some of them for
their horses.

All the extensive yards
which are parred are
grown up to grass and
weeds. Several different
species of lespedeza
and several other wild
legumes are growing
about in the grounds.
There is also an alfalfa
and a peculiar form
of vetch.

Wednesday - Oct. 23, 1930
Tarqstan,



Wednesday - Oct. 22, 1930.

Tangshan - China.
Tai-ping - Chuang, China.
Ta Hsin Feng, China.
Nan Chuang Ping, China.

Cool and clear. In the morning we left by auto for Tangshan, a hot spring resort to look over Legumes. Along the way we saw many very interesting sights. On the side walk, one observed a man being shaved by the wandering barber. Just without the city limits we met a caravan of camels with baskets of persimmons and charcoal. Arriving at Tangshan we went

at once to the park
grounds near the hotel
(Tangshan Hotel) and
looked over the legumes.
Dorsett discovered early in
the season a species of
Medicago which has a
yellow flower and makes
an excellent growth on
poor dry soil. It is a very
prolific seeder and has a
good seed habit. It looks
as though it might be of
promise as a forage and
as a green manure crop.
Other legumes in the
grounds were species
of *Vicia*, *Medicago*, *Melilotus*,
Lespedeza, *Astragalus* and
Coronilla.

Lespedeza striata and
L. tomentosa were very

abundant. *Medicago sativa* was found to quite an extent. The
itch makes a round
growth and has a
double seed pod with
two rows of seed.

We had lunch at the
hotel which is a modern
hotel and serves excellent
meals. Rooms have large
baths supplied by water
from the hot springs.
Room and meals are
at \$8. Mex. per day.

After lunch we went
through the farming
district and first stopped
at the farm village Tai Ping
Chuang where we found
that all soy beans had
been threshed. The farmers
were busy threshing

out by donkey and
roller. adzuki beans.
The beans were badly
mixed consisting of
marbled gray and black,
red and reddish brown.
One of the farmers gave
us samples of mung
beans, soybeans, cowpeas,
wheat, and barley. The
mung beans were small
and dull green. The
cowpeas were white with
a brown eye and pinkish
red varieties.

All along the way the
farmers were busy pulling
the kaoliang and corn
roots out of the ground
for winter fuel. We
also saw in a farm
yard. two farmers

cutting up soybean
straw for cattle feed.
This village was Tai-Ping-
Chuang.

We then went along
the narrow road to
another quite large
farming village of 150
families, Nan Chuang Ping.
Here we collected quite
a number of samples
of soybeans, cowpeas,
adzuki beans, and
mung beans. In one
large farm yard, we
found them threshing
adzuki beans. In
addition to this crop they
had sesame, peanuts,
soybeans, mung
beans, Kaoliang, castor
beans, and corn. The

main street of the village was a creek bed as are many of the streets of the Chinese farm villages.

In another village, Ta Hsin Feng, we also found that soy beans had all been threshed but a few were threshing or cleaning adzuki beans. At one farm where they were threshing adzuki beans, they advised that the beans were cooked, soaked with rice, and eaten. In the farm yard we found many men, women, and children busy shelling corn on the threshing floor. Some had the

small blocks of wood
which was partly
scooped out and had
a piece of iron in the
hollow place. The ear of
corn was scraped over
this. Others were hand
shelling while some
were beating the grains
off with sticks.

On our travels about
the woods, *Lespedeza*
strata and probably
L. cuneata were found
quite abundantly
where the Chinese had
not cut off all vegetation
for winter fuel.

Thursday, Oct. 23, 1930
Peking, China.

Cool and clear. After breakfast, we first visited one of the outside markets. As previous stands we found several kinds of bean curd - from the fresh to the semi-dry. The fresh curd is more compact and of a darker color than the Japanese bean curd. The curd is pressed into small squares and fried in oil, and then several of these pieces are placed on a grass string. Here the bean

is not kept in water
as is done in Japan,
no doubt because of
being of a former texture
as some of the vegetable
stands in our pea
sprouts - about 5 in.
long and with the
first leaves fully
developed. Branches of
Medicago denticulata
were also noted which
are sold as greens.

Various forms of
sprouted beans were
noted and in
different stages of
germination; horse
beans - sprout about
 $\frac{1}{4}$ in. to $\frac{1}{2}$ in. long;
soy beans - sprouts

ranging from $\frac{1}{4}$ to
3 inches long, and
mung bean sprouts
about $2\frac{1}{2}$ - 3 in. long.
Baskets of shelled green
soy beans were also
noted, some baskets had
soy beans $\frac{1}{4}$ in. long,
some $\frac{3}{4}$ - 1 in., some 2 in.,
and other three in. long.
Baskets of mung
bean sprouts were
noted with the cotyledons
removed. Bean sprouts
were quite abundant
on the markets.

We next visited a
storeroom where some
soy bean products were
produced. The only
products handle however
were three forms of
paste or jam which

resemble very much
the miso of Japan. One
was rather thin like a
thick cream soup,
the other dark reddish
brown and quite firm
and the third a rather
dry form.

We were taken to the
yard where these were
being cured in large
earthen jars holding
about 20 gallons. All
were covered with a
grass matting. We
found that four pro-
ducts were made - soy
sauce and three forms
of paste by mixing
equal parts of wheat
flour. The bean paste

is called "Huang Chiang".
The beans are first steamed
until soft. Then the beans
are ground finely and
mixed with the wheat
flour. This material
is then pressed into
cakes about 12 in. long,
4 in. wide and $3\frac{1}{4}$ in.
thick. These pieces are
stored in rooms in
March to mold. The cakes
become very dry and hard
and are said to be left
to mold for six months.
They are then taken out
ground up mixed with
salt water and placed
in large earthen jars
and left to ferment
in the ^{open} yards for about
six months. The mass
in the jars is very

Thick and is gen. to catch dust, dirt and flies as the grass mat is high above the top of the jar. After six months the liquid is pressed out of the material and is the raw source. The residue is made in three different forms. 1- Small amount of water is added giving a pasty product. 2/ a firmer product like heavy paste or jam and third a rather dry paste or jam.

We then visited some confectionary stores to find if they had any day cream

products, we found
in the various stores
not very few products
and these made in
the forms of sweet cakes
from soy bean flour
apparently from roasted
beans.

In the afternoon we
visited the Winter Palace
grounds and saw some
very pretty buildings
but kept in poor shape.
In one place we were
in a the Royal Mulberry
garden, where at one
time of the year the
Empress fed the silks
worms as a lesson to the
people to take care of the
silk industry.

In the gardens we

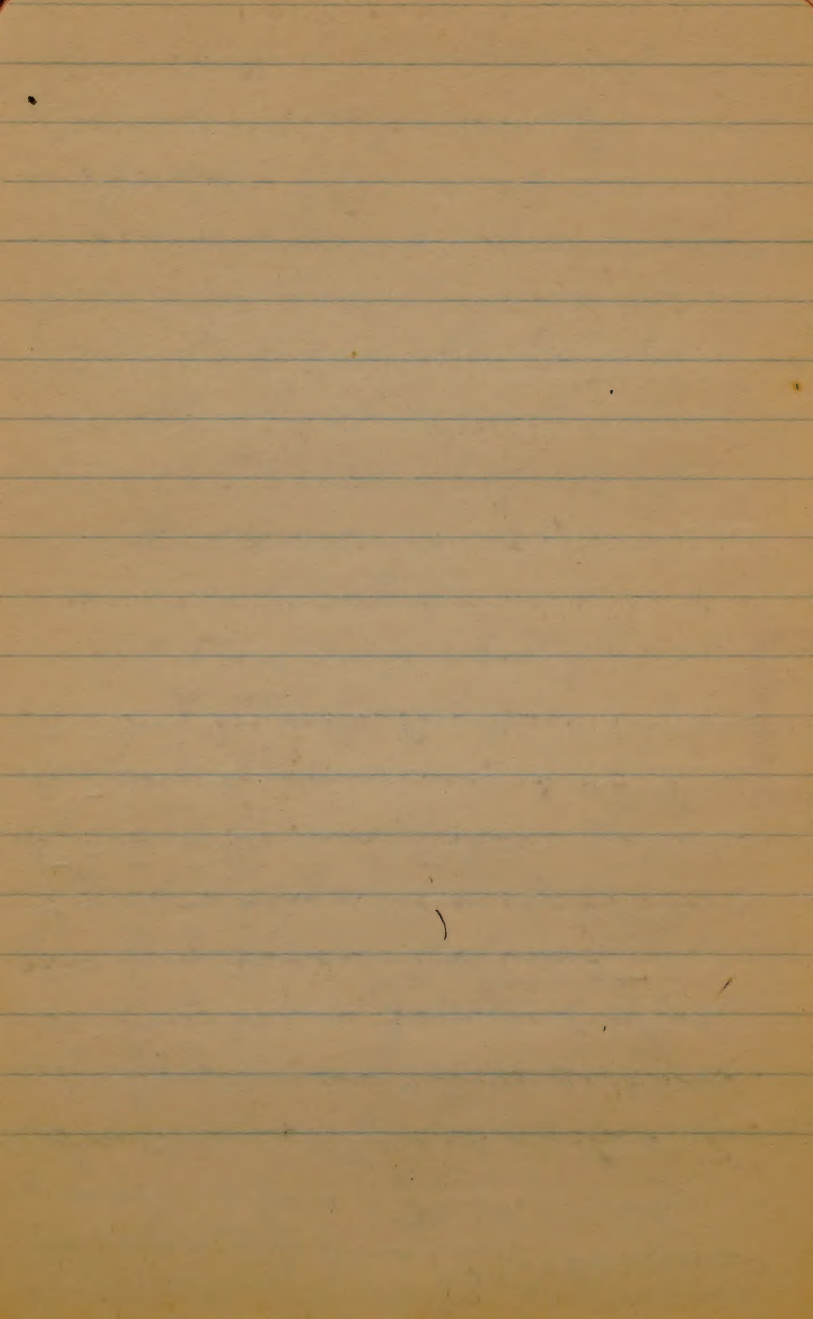
found (Mulberry
Gardens especially)
alfalfa growing in
abundance. In several
places the leaves were
affected quite badly
with leaf-spot, no
doubt *Pseudopeziza*
medicaginis. Samples
were collected.

At the market place
very little yerba was
seen. There were thin
sheets of rayon to find
hid to find when
hot - most placed
in a bag and placed between
cloths and moisture
pressed out. This product
is used for wrapping
vegetables and meats
(chopped up) in cooking.

Also a finely ground
mass of running bean
paste has been observed.

Soybean Products:

- 1 - Soybean Macaroons.
- 2 - Soybean Jam cake
- 3 - Soybean Extract
- 4 - Soybean Candy & flour
- 5 - Soybean Flour cakes
- 6 - Soybean Sweet cakes
- 7 - Soybean Baked cakes



Friday - October 24, 1930.

Peking - China.

Cool and clear. In the morning we took rickshaws and went down to the market section along the sidewalks. Of the soy bean products we found many kinds of sprouts, 2-3-5 and 6 day sprouts, green beans were used for the 2 and 3 day sprouts, as other staples we found several kinds of bean curd. It is noted that the Chinese do not keep the small blocks of bean curd in water as the Japanese do. The small blocks are much firmer and not quite so white. We saw the cakes - small

^{the square}
round and brown - were
boiled or steeped in soy
sauce. There were also
sheets, very thin. I have
heard that had been boiled
in soy sauce. These sheets
were being cut into thin
strings which are used
in soups and fried with
vegetables.

We then visited a $\frac{1}{2}$
Chinese grocery store
where they had soy bean
products - soy sauce,
and three kinds of soy
paste or jam. We were
taken to the place where
these products were
being made.

The soy beans are first
steamed and then
ground rather coarsely.

The ground beans are then mixed with wheat flour. This mixture is then pressed in molds ⁱⁿ about $10 \times 3 \times 3\frac{1}{4}$ cakes. These cakes are placed in dark rooms and allowed to develop mold. These cakes are then broken into small pieces, mixed with salt water and placed in earthen jars holding about 20 gallons.

We then went to the Chinese bazaar where one could buy almost anything. At a few of the Chinese confectionary and grocery stores we found a few soy bean products. At one store we found a form

of string natto and also
a dried form.

Tox Chiah - moist form
of string natto is fried
in sesame oil and
eaten. 16 cts a cattie

Tox Chiah Chiang Hsi is
a form of dry natto made
from much flattened
black beans (like Cloud).
32 cents a cattie.

We also found small
round cakes made
from soy beans that
had been steamed
and allowed to develop
mold. These are broken
into small pieces
and fried in sesame
oil.

at various stands

in the market, these products were noted. also soy bean sprouts were noted in great abundance and are more general than are soya bean sprouts.

Pea sprouts were also noted - about 4-5 in. long with first set of leaves developed.

Horse bean sprouts were also noted. The beans are allowed to develop sprouts - about $\frac{1}{4}$ in. long and then the skin is removed. These sprouts are fried with meat in sesame oil. Bean sprouts are never used fresh but are always fried

with meats in
sesame oil.

Saturday-October-25, 1930.
Peking-China.

Cool and clear. In the morning, we first went to a place where beans were sprouted. The place was a small one located beside one of the city water wells. The sprouting room was not more than 10 X 12 and was heated with open charcoal fire. The temperature of the room is kept around 95° the year round. Mung beans and soy beans are sprouted. The beans are sprouted in large earthen vessels.

Both mung beans and

soy beans are sprouted
in much the same
manner. The owner of
the sprout place is
Mr. Chang Tzu Heir
Bean Sprouting.

The beans are placed
in warm water about
 100° for about five
hours - 10 A.M. to 3 P.M.
They are then placed
in one of the large
vessels, covered with
a grass mat cover until
8 the next morning.
Then the beans are
transferred to another
jar. The beans are
transferred to 5
different jars during
the sprouting process.
a different jar

every day. Mung
beans and yellow
soy beans sprouts
are ready on the 6th
day. Yellow soy beans
are used only for
the long sprouts.

Green soy beans are
also used but for short
sprouts. 3 days give
sprouts 1 in. long,
and 4 days, sprouts
2 in. long. In cold
weather one day longer
is required in each
of the above sproutings.
Yellow beans are always
used for long sprouts
and green beans for
short sprouts. People
prefer the green beans
with short sprouts.
Grass mats are used

over the vessels in which the beans are being sprouted.

With the yellow soy-bean sprouts are about 2 $\frac{1}{2}$ in long. The root part of the hypocotyl is picked off. The yellow bean sprouts by Chinese women and children at 10 coppers (2 coppers to 1 cent Mex) per 15 catties.

When the sprouting of the beans, water is added 3 times a day. Holes are in the bottom of the earthen vessels to drain off the water at the time of washing.

11 catties of young beans for 200 of sprouts.

15 catties of soy beans
for jar of sprouts.

10 catties of mung bean
sprouts sell for 80
coppers (40 cents Mex).

10 catties of soy bean ^(yellow)
sprouts sell for 140
coppers (70 cents Mex).

These are the wholesale
prices of the factory. Green
soy bean sprouts sell
for 46 coppers (23 cts. Mex)
per cattie.

1 cattie of dry mung
beans produce 6
catties of sprouts.

1 cattie of dry yellow
soy beans produce
 $4\frac{1}{2}$ catties of sprouts.

1 cattie of dry green
soy beans produce
3 catties of sprouts.

Mung bean and soy-bean sprouts are never used fresh in salads. Mung bean sprouts are used fried with meats.

Soy bean sprouts (yellow) are usually mixed with pickled turnip leaves, and fried with meat.

Green soy bean sprouts are mixed with mung bean paste (residue left in the making of bean tarricelli) and fried in sheep fat.

Bean sprouts are fried always with meats and sometimes with vegetables.

The glossy mung beans are best for sprouts and

come from the Kalgan
region. Soy beans for
sprouts are considered
the best for sprouts,
next to the Kalgan soy beans
the small soy bean from
about 20 miles south-
west of Peking are best.
Broad beans are also
used for sprouting
but the sprouts are
only allowed to develop
about $1\frac{1}{2}$ in. The skin
of the beans (broad) are
removed after sprout-
ing. These are also fried
with meat.

Bean Curd Factory. -
The best soy beans for
bean curd come from
the Kalgan region.
The beans are soaked

for 12 hours in cold water. Then the soaked beans are ground with a stone mill, with a small stream of water running in the beans during the grinding. Mules or donkeys are used to turn the mill. The bean curd produced by this factory is known as native bean curd which is of finer grain than that known as southern bean curd.

A solution made from plaster stone (Gypsum) is used in coagulating the soybean milk.

The soybean milk.

is brought to the
boiling point and then
the gypsum is added.
The residues left from
making the milk is
used for hog feed.

The ground bean
material which is quite
soft is placed in a
cloth strainer and
the strain worked back
and forth straining
out the milk. The milk
is strained again
through this cloth.
It is then placed
in the iron kettle
and under a slow
fire is brought to the
boiling point.

After the curd has
formed, the material
is placed in a small

wooden mold but
first a cloth is placed
in the mold and the
cloth place over the
mold, after the cloth
is folded over, the
material is placed on
a board. About three
of these are placed one
on another under
a press and excess
water pressed out. This
block of curd is then
cut up in small
squares (72). These
pieces are some wrapped
in small pieces of cloth
and others in small
round baskets with the
top folding down like
a rubber tobacco case.
These are placed on

boards and again
put under press for
about $1\frac{1}{2}$ hours.

These small square
and round cakes are
boiled slowly in soy
sauce for about 5
hours. The soy sauce
is brought to the
boiling point, the fire
put out and the curd
cakes put in and
left for 5 hours. Some
coloring matter is
put in the sauce to
give the cakes a dark
reddish brown color.

These small cakes
sell wholesale - 10 for
32 coppers (16 cts. Mex).
In the markets these
cakes retail for
2 coppers (1 cent Mex) each.

This factory also sells
soybean milk and
has a regular family
trade. Milk sells -
30 bottles per month -
at \$1.00 per (8.2965 in
U.S. Gold). Each bottle
holds 10 oz. nearly
1 Amer. pound 12
Chinese ounces equal
1 Amer. pound.
Soybean milk is
used for drinking
by all Chinese classes.
Milk is made and
sold during the entire
year.

Mung Bean Sprouts.
at this factory only
mung beans were
sprouted. Broad
beans are also used.

at this factory for
sprouting the beans.
Practically the same
method of soaking and
washing the beans
and bean sprouts
are followed as at the
other factory.

Eight catties of soy-
beans are placed to
a tub. On the 6th
day, this will give
50 catties of bean
sprouts.

A tub of running bean
sprouts brings 70
cents Mex. wholesale.
The sprouts are sold
in the retail markets
at 2 cents. Mex. per
cattie. The beans used
at this factory are

of the dull green variety
and are grown in the
Peking district.

Sunday - October 26, 1930.
Peking - China.

Cloudy and cold.
In the morning
wrote some official
correspondence and
wrote up quarterly
report notes.

In the afternoon
we went to visit the
central part of the
Forbidden City. Here
we saw magnificent
living quarters and
reception halls of
the Chinese Imperial
families of many
generations. Several
of these buildings are
fixed up as museums
housing various
treasures of the royal

families of many generations. There were magnificent exhibitions of jade, bronze, coral and china, also porcelain productions. There was also a hall with paintings of artists of several hundred years, and also by the Empress dowager.

One evening wrote notes on quarterly report.

Monday - October 27, 1930
Peking = China.

Cloudy and cool. We first went to the bean sprout factory of Mr. Chang. We were taken into the sprouting room kept at a temperature of about 85° F. with humidity rather high. Wooden tubs are used for the sprouting. Only mung beans (dull green) from the Peking district are used. The best grade of beans (glossy green) for sprouts come from the Kalgan region and are more expensive.

The beans are first soaked for 5 hours in hot water in a large

earthenware receptacle
holding about 50 gals.
The dry beans are put
in the hot water about
6 A.M. and taken out
at 11 A.M. After soaking
5 hours the beans are
placed directly in the
wooden tubs and left
there until fully sprouted
(not changed from dish
to dish as in the factory
visited Sat.). The tubs
7 $\frac{1}{2}$ cwt. of soaked
beans are placed in
each tub. The sprouts
are washed with warm
water five times daily -
3 times during the
day and 2 times at
night.

When the demand

for sprouts is ten the
sprouts are left for 6
days but when the demand
is high the sprouts are
put out on the 4th day.

Each tub (7'1/2 catties of
soaked beans) produce,
4th day - 40 catties sprouts
5 " - 45 " "
6 " - 50 " "
7 " - 55 " "
8 " decrease -

On the eighth day
the weight of sprouts
is reduced, being hollow
and are no good. The
5th and 6th days give
the most and best
sprouts.

The dealer buying the
sprouts has the hulls
washed off the sprouts.

There are certain places
where this work is
done.

The bean sprouts are
sold wholesale at
70 cents. Mex. per tub
(50 catties sprouts).

After the tubs are re-
turned from the dealers,
they are washed with
clean pure water and
then baked or dried
over charcoal heat to
kill out any molds
and dry up root hairs
which may cling to
the wood.

This company sells
about 30 tubs of
sprouts per day. In
Feb. and Mch. they
sell from 180-200

tubs per day. The factory uses 800-900 sacks (160 catties per sack) of mung beans yearly. The beans of the Peking district are bought at 12 Mex. per sack while the Kalzan glossy green bring 12 Mex. per sack.

The wooden tubs have drainage holes in the bottom.

Most beans are sprouted in Feb. & March as the Chinese have special festival days at this time and used bean sprouts extensively in their dishes. They make a special spring

cake or dish in which
pieces of pork, spinach,
leek, bean vermicelli
and bean sprouts are
all mixed together
and fried in the se-
same oil.

Sprout Factory # 2.

We then visited
another sprout factory
where only mung beans
are used. Wooden tubs
are used as at the
other factory. However,
here, they used 8
catties of soaked beans
to the tub which
produce on the 6th day
about 50 lbs. of sprouts.
Each tub sells whole-
sale at 70 cents.

Mex. per tub. The
sprouts retail at
2 cents Mex. per cattie.
The dull green beans
from the Peking section
are also used here.
Noodle & Vermicelli Factory.

Not far from the bean
sprout factory we found
a factory where they
were making vermicelli
and noodles from
mung beans, and
mung beans and corn.
The beans (dull green)
are put to soak at
night in hot water
and soaked for 24
hours. When corn is
used the corn is
soaked the same
length of time.

after soaking 24 hours
the beans are ground
fine with water run-
ning into the beans
during the grinding.
After grinding, the
material is quite
soupy is sifted thru
fine screens twice.
The coarser material
with hulls is sold
fresh on the market
as bean paste. The
sifted or strained
material like milk
is transferred to a
large wooden tub
where it is left for
seven (7) hours to
allow the settling
of the heavy bean
substance. The water

is strained off the
top and the residue
is placed in sacks
and the water pressed
out. To get as much
moisture out as possible
the material (now very
hard, having been under
high pressure) in sacks
is placed or buried
in wood ashes for
about 2 hours. These
cakes, white and
very hard, are a sort
of dough. The material
when needed badly is
dried out in ashes but
when not in a hurry
the sacks of hard
substance are hung
in the sun to dry which
takes much longer.
In making the

woodles or vermicelli.
These blocks of material
are ground up and
mixed with water &
make a firm but
soft dough. Lumps
of this dough are put
in a half gourd at
the bottom of which
are fine holes. The
dough is struck
continually with the
fist giving the long
strings of vermicelli
which run into an
iron kettle of hot water.
The strings of woodles
or vermicelli on dropping
into the hot water are
cut off in about 30 in.
lengths. Then the
woodles or vermicelli

are transferred to cold water and then placed on short sticks and taken out in a yard, hung up and dried in the sun.

When white noodles are desired 50 % soaked corn and 50 % mung beans are mixed and ground together. This mixture is then put through the same processes as in making bean vermicelli.

1 sack of mung beans produces 70 catties of day dough material. 70 catties of this dough produce 50 catties of vermicelli. Wholesale price of large bundle (consisting of 130 small bundles)

and weighing 10 catties)
sells for \$1.60 Mex.

About 25 men are
employed in this factory.
Two large stone mills
about $3\frac{1}{2}$ feet in diameter
are used in grinding
the beans. The factory
has a well within
the mill and work
room.

X Chinese Bean curd
10/26/30 -

Gypsum is powdered up
and water solution made
for curdling the bean milk.
Ordinary yellow bean from
Peking district used. Large
soybean from east of Peking.
Curd factory pays \$8 Mex
per sack of 140 catties.

In cold weather beans are
soaked in warm water for
3 hrs. In summer the
water is hotter for soaking
the beans. Taking a shorter
time for soaking. Length
of soaking depends on the
quality of the bean and
the time of year.

10 catties of dry soybeans
produce 120 pieces of
curd (small) - each piece

1 curd weighs 4 oz (16 oz make 1 cattie).

10 catties of dry beans produce 30 catties of bean curd.

Residue from making bean curd or milk is used for hog feed.

Only make Southern curd.

The material after grinding is strained twice through a cloth getting out the milk. This milk is then boiled in large iron kettles. On boiling the milk is brought to boiling point under slow fire. The gypsum solution is added to

hot and is hot in the
winter. In autumn
and spring the solution
is warm and in the
summer is cool.

The southern curd seems
to be a little finer grained
than native Peking curd.

After milk is boiled
it is again strained
through a cloth.

Small cakes of curd are
boiled in soy sauce for
1 hour or until right
color is reached. Coloring
matter is added. The native
curd which is coarser
takes longer to boil - 4-
5 hours to become
colored properly and absorb
the flavor.

About two quarts of
the milky supernatant

solution is added
about 10 gallons of hot
milk,

Yuba is made but
little. The skum being
taken off and hung
on wire to dry.

Small blocks of soy
sauce which sell for $1\frac{1}{2}$
cent (mex) ^{on market} each. 1 board
of 24 pieces of curd which
sells for 30 cents (Wholesale)

I'm making thin sheets
of bean curd. The curd
shortly after curdling
(10 min). when yet very
hot is stirred vigorously
with coarse bamboo
brush

Thin sheets are called,
"Chien Chang".

Grain Store - Peking 10/26/30

Small flat black soybean - used for dried natto-like product, and for cattle feed.

Green soybean - used for making sprouts

Yellow soybean used for making bean curd, soap.

White corn - for making

porridge cooked with millet.

生豆 (sheng dou) 何 (he) 七 (qi) 号 (hao)

Bean sprout & sprout washing place. Green beans are used

Beans are soaked in warm water (winter & cold in summer) for 5-6 hours.

Then in autumn or winter sprouts are washed in water 2 times a day and in summer 3 times

a day. Sell sprouts on 3rd or 4th day. Green

beans always sold with short sprouts.

10 catties of dry beans

produce 25-30 catties
of bean sprouts (green
bean sprouts $\frac{1}{2}$ in long)

10 catties of yellow
ray beans produce

40-45 catties sprouts,
Takes 7 days to
produce yellow ray bean
sprouts.

Green ray sprouts (Wholesale)
is 4 cents max
per cattie.

Yellow ray sprouts
(Wholesale) $3\frac{1}{2}$ cents per cattie.

Beans are sprouted
in shallow baskets
12 in. high. and about
24 in. in diameter.

Wrote up soy bean
products and notes
at night.

Tuesday - October 28, 1930.
Peking - China.

Cloudy and cool. For corn
waste - use corn stalks,
dry soy bean leaves, and
grass. Layer of plant material
thinner layer of soil.

When planting millet.
wheat, kaoliang and corn
compost is scattered over
land and land then plowed.
During planting a mixture
of night soil and horse
manure is added. all
crops are planted live.
The bean crops are not
fertilized. For rice the
compost soil is not used
but use almost entirely
night soil. If no night
soil then horse manure

is used.

Soybeans are always planted level. Rows
Two rows - 12 in. apart
Then 2 more rows 4 ft
apart.

Soybeans are nearly
always planted with
corn and Kaoliang.
Planted with Kaoliang
in 4 ft. rows between
hills of Kaoliang. Some
times between Kaoliang
rows.

Best fields yield
from 220-240 catties
per Chinese acre (6
Chinese acres to one
American acre) i

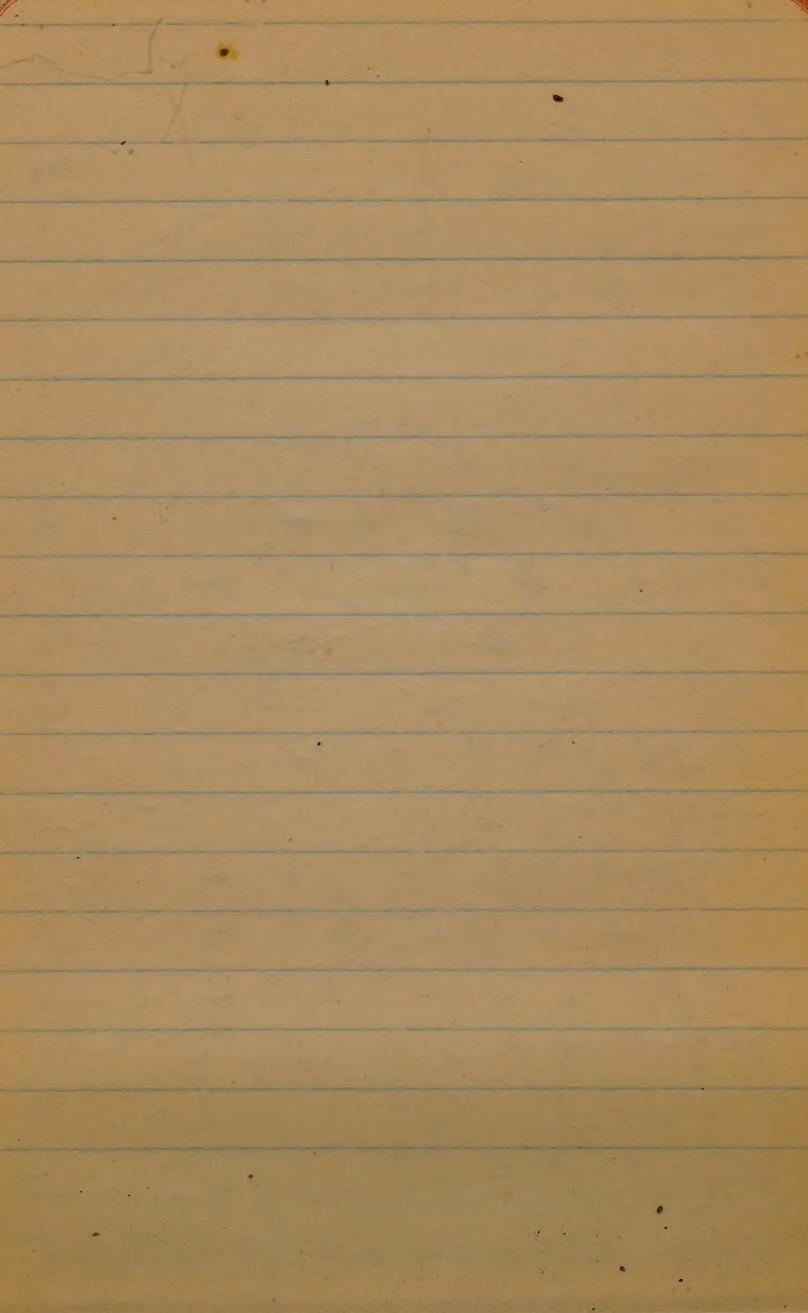
We left shortly after
9 A.M. for the Botanic
Garden about 3/4 of a

mile from the West Gate.
We went to the experiment
where we met two of
the assistants. This station
is doing extensive work
with cotton, rice, and
fruits, also mulberry
for silk culture. Some
work is being done with
field crops such as
beans and peas. We
were given 19 samples
of beans and peas.
(say beans, cowpeas, rice
beans, adzuki beans
and mung beans and
field peas). The cowpeas
are considered a vegetable
crop and is handled
by the vegetable department.
On the grounds
about the fields and
in about the parkings

which were badly grown
up with weeds. We found
two species of Melilotus,
one of which some species
of Lespedeza, and the
wild soy bean which has
a small mottled black
and olive brown seed.
The seed of the soy bean
was all shattered out.

We returned from
the Botanic Gardens by
another road taking
us to another part
of the farming section.
Much of the land
had been devoted to
truck crops but now
was given to winter
wheat. We saw some
fields of radishes and

onions in rows about
24 inches apart and
in the furrow between
the rows, winter wheat
had been sown. In some
cases, two rows of winter
wheat about 12 inches
apart were 4 feet
apart from another
two rows 12 in. apart.
No activity was noted
as we passed through
different sections.
All the crops had been
harvested, threshed
and cleaned.



Wednesday - Oct. 29. 1930.
Peking = China.

Dry same factory. Wheat
flour is rolled on boiled beans.
No special variety used. Yellow
variety used. Variety desired
with thin skins. Dry
beans after rolled in flour
Let them mold 1 week.
Boil beans in Wed. & Apr.
Put dry molded beans
in salted water and in
jars. rather a thick mass.
The mass in jars is
stirred with sticks two or
three times per day.
Stirred every day for six
months. but jars of mass
kept two summers more.
Mash is thus kept 6
summers. Juice is then
squeezed out in fall

and kept to sun cure for 1 or 2 years
Box presses weighed down
by stones are used. Some-
times 1st juice is mixed
with wash to make a
very high quality of sauce
Other times water is
mixed with 1st pressed
cake and this may be
done 4 or 5 times giving
cheaper qualities of
sauce. The pressed out
material
is sold as pig feed.

1st year - 1 cattie of game
gives 6 oz. 1st quality sauce
2nd year - 1 cattie game
gives 10 oz. 1st quality sauce
2nd quality is better than
1st year.

3rd year - 1 cattie of game
produces 14 oz. of

Sauce of higher quality
than 1st 2 years.

Produce six different
kinds of sauce.

The juice is not boiled
after being pressed out.
The first juice pressed
out is placed in jars
and left for two weeks.
This is done to clear
up the soy sauce from
sediment.

1st var. 1st juice
5th var. the third juice
is mixed with the
2nd variety
4th var. the 2nd & 3rd
juices are mixed
together.

~~4th~~
First three pressings
are the 1st 3 qualities

The steamed beans
rolled with wheat
flour are placed in
dark room to mold.

Boiler holds 100 caths
of beans. Dry beans
are placed in kettle
and water placed just
above beans. Beans
boiled slowly for 5
(five) hours. Beans
are not allowed to
get too soft. at end
of 5 hours water is
all used up.

Soy pressed mash is
called "Chiang Chia
Tzu"

Jams called
"Chiang Pi Tzu."

Soy Sauce "Chiáng Yu"
Jars for holding and
curing snash or jam
holds 800 catties.

Bags of different kinds
of vegetables - radishes,
turnips - cucumbers are
placed in jars and
cured in wheat noodle
jam. Vegetables are first
soaked in salty water.

Huang Chiang

Soy bean miso-like made
up of 50 % wheat flour
& steamed or boiled
soy beans. Made into
small blocks like the
little round cakes of dry
wheat & soy beans recently
purchased at Market.
Soy sauce is also made
from this product. The

blocks are broken up,
mixed with water and
cured in jars for 6 mos.
Longer curing makes
better jam and darker
color.

When soy sauce is
used to mix with pork
for making sausage,
the soy sauce (second
quality) is brought to
the boiling point.

When boiled, a sack of
the following mixture of
herbs is placed in the sauce.

Kaeipi - Cinnamon bark

Huachiao - ~~Solomon's~~ ^{Chinese} pepper

Kuang Hiao - ~~Star~~

Pai Chih =

Huei Hsing = Fennel
seed

Tien Mien Chiang
(Dried flour jam)

Made wholly from
wheat flour (coarsed and
in blocks. Made the same
as Huang Chiang.

In curing vegetables
in the wheat jam, the
vegetables are left for
two weeks. In some
the vegetables are placed
in small sacks and
in other cases vegetables
are placed right in
the jam.

All soy sauce made is
cured 1 year at this place.
Old jars are 300 years
old. The new jars are not
good as they cause much
to mold. Old jars are

best. This factory is
300 years old. Jars cost
40-50 dollars. Here.

Best quality sauce
retails 32 per bottle about
1 quart - Cheaper grade
sells 16 cents per bottle.

2nd Soy Sauce.

Takes three years to
cure mash giving the
sun cure. 3 qualities
of sauce are made.
Sauce boiled only when
it is to be used for
pork sausage. This
soy sauce factory is
also about 300 years
old.

Leave jar for 1 year
then press and

Leave the sauce to
sun cure in jars in
yard for 1 year. If
jam is left two years
much higher quality
but much less sauce
is obtained.

In both factories the
jam is sun cured for
1 year and the pressed
and sauce ^{sun cured} for one or
two years. The sun is
the big factor in the
manufacture of the sauce.

Bean curd Factory.

Use yellowish green
variety. The dry beans
are first cracked very
coarsely and then soaked
in warm water for two
hours. The soaked
beans are then ground

finely in stone mill
drawn by mule.

The small green is
used but makes as
much curd as the
yellow but not as
good quality.

10 catties dry beans
produce 30 catties
of curd.

Small block about
5 oz. sells for 1 cent.

10 catties dry beans
make 100 small
blocks of curd.

The curd is pressed
about 1 hour to take
out excess water.

Here they use

$\text{K}_2\text{H}_2\text{O}_4$ - Magnesium
sulfate solution to

to add to milk to
make the curd.

after grinding the
mash is put in
large sieve and milk
is strained out and
brought to the boiling
point. The solution
is added when the milk
is about boiling hot.

Peking Grain Exchange.

In the morning we
first went to the street
grain exchange. Here
the grain men have
small tables on which
they display the different
grains they have for
selling. They sell not
less than 5 sack
lots (sacks 160 lbs. each).

The buyers took over the samples and if a purchase is made they shake hands by thrusting their right hand up each other's sleeve which binds the bargain for the purchase. The exchange is open early and most of the merchants are gone by 9.30 A.M. This grain market exchange is held every other day and the tables are arranged along the sidewalk. On the market we saw the following grains:

Soybeans - black, yellow,

green. greenish yellow.
The blacks were also
the flat black of the
Peking type.

Mung beans - dull and
glossy green varieties.

Conceas - brown eye and
Whijpoornill sorts

Millet - Several varieties

Wheat - " "

Rice - " "

Kaoliang -

Adzuki beans - Mostly
gray marbled.

Buckwheat.

The green varieties - with
green germ appeared to be
about the same. One green
variety with black hilum
was said to have come
from Kalgan.

Bean Sprout (Mung)

Soak beans in warm water for 5 hours. Then beans are put in wooden tubs, and left to sprout. Washed 3 times in day and twice at night. 6 days for sprouts. If demand is heavy, 5 day sprouts are sold. Cannot keep longer than 7 days.

After tubs are returned the tubs are baked dry over a charcoal fire (dry heat). The hairy dull green bean is used green in

the Pabany District
These beans sell for
\$9. Mex per sack of
155 lbs.

1 cattie dries beans
produces 6-6 $\frac{1}{2}$ catties
of bean sprouts.

Each Tub holds about
55 catties.

Sprouts sell for 63
cents Mex. per tub.

There place supplies 8-10
different bean sprout
washing places, which
sell the washed bean
sprouts to the Market
stands.

Temperature in sprout
room 95°. Heated by kettle
of water over charcoal
fire.

Sprout tubs 20 in high
○ — 15 in (— 16 in at
14 the bottom)

Bean Vermicelli Factory -

Two large stone grinders
driven by electric
power. One for grinding
positively white corn
makes a very fine
sandy mash which is
said to be used for
making whitemash.
Corn product sells for
\$1.66 Mex per ten catties.
The other mill is used
for grinding young
beans for making
bean vermicelli and
noodles.

1 bushel dried corn
(13 catties) produces 5-6
catties of white wash
ground. By white wash
is meant for laundry
purposes - starching
clothes.

1 bushel dry mung
beans produce $4\frac{1}{2}$
catties mung bean
vermicelli 1 Chinese
bushel of mung beans
weighs 16 catties.

Wholesale price of
vermicelli is \$2.20
Mex. per 10 catties.

Vermicelli made of
50% corn starch and
50% mung bean
starch flour.

Strings of vermicelli
from several sizes

are run into hot
water where they are
cut off at certain lengths.
Then placed in cold
water & washed. Then
about 3 feet of mass
transferred to another
kettle of cold water
washed & placed on
stick. Allowed to drain
for a few minutes.
Then drained in a
basket, then hung
up to dry.

Beans and corn are
soaked 24 hours
before grinding.

Fewer samples of
soybeans were received
from the train.

Inspection Office at
Chimampo, Chosen.
Such was received
through Dairen Consulate.

At evening about
5.30 we went to call
on Dr. Gamie's Kim
whom we met in
America. She told
of some of the soybean
products and showed
a set of beautiful
dishes made from
casein milk. She
thought that this
also could be done
with the casein from
the milk of soybeans.
She also told of a
place in Peking
where Buddhist
dinners are served.

all sorts of foods
such as mock duck,
mock chicken,
mock meat are made
from soy bean curd.

Thursday, Oct. 30, 1930.

Peking - China.

Cold & raining. In the morning worked in the quarterly report. Wrote up photographs.

In the evening we all went to the home of Dr. Yarnai Kim where we had dinner. She first served Chrysanthemum soup in which the petals of white chrysanthemum were used, ming bean vermicelli, small mushrooms. The next course was made of bean curd, small pieces of chicken, mushrooms, very similar to chicken a la king.

Dr. Kim said that
soybeans were grown
quite extensively in
South China. The beans
as well as sweet
potatoes were grown on
small mounds in
the rice paddy fields.
She also told of a
section where they
make large cheeses
out of soybean curd
all of the various forms
of soybean cheese in
China are made
from soybean curd.

Dr. Kim showed us
some dishes made
from milk casein
called Beati and
called Linga Longa

ware, it is very
light in weight and
unbreakable. Whole
sets of dishes are
made from this pro-
duct. It is made
in County England.
It seems that this
ware could also be
made from the casein
of any home milk.
It seems as though
this ware should be
an excellent product
for Americans not
only for every day use
but also for luncheons
and picnics. It
comes in four
different colors.

Friday - October 31 - 1930
Peking - China.

Cold and snow all
during the morning.
Worked on expense
account for October in
the morning and
wrote up photo notes.

Thursday, ~~Oct 9, 1930.~~
Sairen, Manchuria.

Small round cakes.

Tou Chiah Ping

(Mashed bean cake)

Like dried string motto

Cakes broken in pieces -

fried in hot sesame oil

& eaten as pickle. Made

of all symptoms.

5 coppers (1 1/4 to max) a piece.

Chiang Tou fu.

Jam Tou fu

Rice wine, salt - Placed in
jar - sealed up and placed
in sun for year to cure.

Then forms red & white.

with red some colored
substance - red rice made
by fungus growth.

Peking, 10/25/30

Made in south.

$$\begin{array}{r}
 11 \\
 2,2 \\
 \hline
 22 \\
 22 \\
 \hline
 2421 \\
 \hline
 4
 \end{array}$$

